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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,814	12/29/2003	Hiroshi Higashiyama	03788 /LH	7189

1933 7590 09/14/2005

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 5TH AVE FL 16
NEW YORK, NY 10001-7708

EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,814

Applicant(s)

HIGASHIYAMA, HIROSHI

Examiner

Hargobind S. Sawhney

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/1/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on July 1, 2005 has been entered. Accordingly:
 - Claims 2 and 3 have been cancelled; and
 - Claims 1, 4 and 6 have been amended.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the external surface recited in Claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim 5 of the instant application has been examined the light entrance surface of the light guide as the external surface – the surface external to the dot light source.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boller et al. (US Patent No.: 4,096,550) in view of Millikan et al. (US Patent No.: 5,883,684).

Regarding Claim 1, Boller et al. ('550) discloses a surface-shaped light irradiation device (Figure 1) comprising:

- a dot light source 2 emitting light substantially radially (Figure 1, column 2, line 11);
- a light guiding plate 1 including: a light entrance end surface – the surface defining a cavity 13 (Figure 1) - adjacent the dot light source 2 (Figure 1,

- column 2, line 11); the light –emitting surface 19 guiding and uniformly emitting the light entering from the light entrance end surface(Figure 1, column 2, lines 11 and 12), and a back surface 4 opposite the light – emitting surface 19 (Figure 1, column 2, lines 15-19);
- a retaining section 12 including the cavity 13, and housing the dot light source 2 (Figure 1, column 2, lines 11-14);
 - the retaining section 12 including a wall – outer wall of the cavity 13 – surrounding a periphery of the dot light source 2 (Figure 1);
 - the wall of the retaining section 12 surrounding the dot light source, formed by the entrance end surface of the light guide plate 1 (Figure 1); and
 - the dot light source 2 disposed in an area surrounded by the retaining section 12 and light entrance surface (Figure 1).

However, Boller et al. ('550) does not specifically teach the dot light source 2 fixed to the light retaining section by an adhesive agent disposed between the surface of the dot light source and the retaining section.

On the other hand, Millikan et al. ('684) discloses a light guide assembly 31 including a dot light source 32 fixed to a light guide 36 by an adhesive agent 60 disposed between the surface of the dot light source and the retaining section 51 (Figure 5, column 3, lines 62-65; column 4, lines 16-18; and column 5, lines 30-34).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the surface-shaped light irradiation device of Boller et al. ('550) by fixing the dot light source with an adhesive as taught by Millikan et al. ('684) for the benefits of structurally secured, and optically compatible positioning of the light source with minimal loss of light.

Regarding claims 4-7, Boller et al. ('550) in view of Millikan et al. ('684) discloses the surface-shaped light irradiation device further comprising:

- the retaining section 12 formed integrally with the light guiding plate 1 (Boller, Figure 1); and the retaining section extending from the light entrance end surface (Figure 1);
- the dot light source 32 comprising a flat light emitting surface for emitting light toward a part of an external surface- a portion of the light entrance surface of the light guide 36 (Millikan, Figure 5); and the dot light source 2 abutting the light entrance surface of the light guide 1 (Boller, Figure 1); the dot light source 32 fixed to the wall opposite to the light entrance end surface 34 (Millikan, Figure 5); and
- the retaining section 12 comprising a wall – defining the cavity 13 – protruding from the light entrance end surface, positioned at the end of the light guide 1, and surrounding the dot light source 2 (Boller, Figure 1) and a hole 13 formed in the wall (Boller, Figure 1).

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boller et al. (US Patent No.: 4,096,550) in view of Millikan et al. (US Patent No.:

5,883,684) as applied to Claim 1 above, and further in view of Aoyagi et al. (US Patent No.: 6,825,894 B2).

Regarding Claim 8, Boller et al. ('550) in view of Millikan et al. ('684) discloses the surface-shaped light irradiation device further comprising a dot light source mounted on a circuit board, and the circuit board further supporting the light guiding plate. However, neither combined nor individual teaching of Boller et al. ('550) and Millikan et al. ('684) specifically teaches the circuit board being a flexible circuit board, and a portion of the flexible circuit board being adhered to a back of the light guiding plate by an adhesive member.

On the other hand, Aoyagi et al. ('894 B2) discloses a liquid crystal display (LCD) system (Figure 1) comprising:

- a flexible circuit board 5 bearing dot light source 8, and a portion of the flexible circuit board attached to the back surface of the light guiding plate 4 (Figure 1, column 8, lines 4-8, and column 9, lines 1-7).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify the surface-shaped light irradiation device of Hooker et al. ('422) by providing:

- the flexible circuit board bearing dot light source as taught by Aoyagi et al. ('894 B2) for the benefits of providing electrical connections between the printed circuit board, the light source and the LCD display panel with minimum possible parts; and

- the flexible circuit board having is portion attached to the back surface of the light guiding plate with an adhesive element as taught by Aoyagi et al. ('894 B2) for the benefits of mounting the light source in structurally stable manner.

Regarding Claim 9, Boller et al. ('550) in view of Millikan et al. ('684) discloses the surface-shaped light irradiation device (Boller, Figure 1) further comprising the adhesive element being a both-surface adhesive tape (Aoyagi, Figure 1, column 8, lines 4-8, and column 9, lines 1-7).

Response to Amendment

6. Applicant's arguments filed on July 1, 2005 with respect to the 35 U.S.C. 102(b) rejections of claims 1 and 4 and 35 U.S.C. 103(a) rejections of claims 5-9 have been fully considered but they are moot in view of the new ground(s) of rejections.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Parker (U.S. Patent No. 6,755,547 B2), Schoniger et al. (U.S. Patent No. 5,136,483 B2), Baba (U.S. Patent No. 4,729,983

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S. Sawhney whose telephone number is 571 272 2380. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571 272 2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

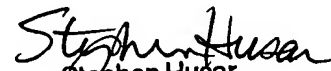
Art Unit: 2875

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Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HSS
9/10/05


Stephen Husar
Primary Examiner